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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,618	04/16/2004	Jian Cao	P-21057.00	1313
27581	7590	07/05/2006	EXAMINER	
MEDTRONIC, INC. 710 MEDTRONIC PARK MINNEAPOLIS, MN . 55432-9924			KAHELIN, MICHAEL WILLIAM	
			ART UNIT	PAPER NUMBER
			3762	

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/826,618	CAO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael Kahelin	3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/24/2006 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 4/27/2006 with respect to claims 1-4, 7-13, 16-18, and 20-22 have been fully considered but they are not persuasive. Applicant argued that Kim et al. (2002/0183637, hereinafter "Kim") fails to disclose validating a template in response to selected (second) events and using the same selected (second) events to update the template because the beats used to validate are not stored, thus the beats used to validate cannot also be the beats used to update the template. This is not found moving because the independent claims are "comprising" claims requiring that only "second events" are used to verify the template and that the events are also used to update the template. As cited in the reply filed 4/11/2006, Applicant directed attention to Figure 6 of Kim to shown that the template is correlated with the next 21 beats (i.e. beats 1-21), and if invalid, replaced with the subsequent 16 beats (i.e. beats 22-38).

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However, if the "second selected events" are considered to be beats 1-38, Kim anticipates a method/device because the disclosed method comprises determining whether the template is valid in response to beats 1-38 and updates the template using beats 1-38.

3. Applicant further argued that Kim does not teach determining consecutive events having first characteristics prior to identifying first events and second events having second characteristics. However, irrespective of whether Kim uses a moving window, the method disclosed by Kim still determines consecutive events having a first characteristic (RR interval greater than the threshold disclosed in paragraph 0071) and first and second events having second characteristics (the qualifications for "NSR" beats, such as disclosed in paragraph 0078). Because these criteria are applied to all candidate beats, they are applied to the "first selected events" and "second selected events" (i.e. beats 1-38 as explained above), thus meeting the claim language. The particular "NSR" criteria are still considered to be an obvious matter of design choice to an artisan with ordinary skill, as further explained in the rejection under 35 USC 103(a) below.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 7-13, 16-18, and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (2002/0183637).

6. In regards to claims 1, 10 and 20, Kim et al. disclose a device/method that comprises generating a first template from a first set of sensed events (par. 0007), comparing the first template to a second template (par. 0008), and replacing the first template with the second in response to the template not being valid (par. 0010).

7. In regards to claims 2 and 11, Kim et al. disclose that the template update operation can be repeated indefinitely every 10 minutes to 24 hours (par. 0064), inherently enabling their invention to verify the template a third time.

8. In regards to claims 3, 4, 12, 13, 21 and 22, the invention further comprises determining whether R-R intervals are greater than a threshold (pars. 0071 and 0081) and a number of subsequent events are identified as first or second selected events (par. 0082). The examiner is interpreting the identification of the subsequent events as first or second selected events as the comparison of the template (first events) with the newly acquired beats (first or second events, depending on the comparison with the template).

9. In regards to claims 7 and 16, cross-matches are determined between the events identified as first selected events, a predetermined number is established, and the template is generated from this group of super-threshold, predetermined number of events (par. 0108).

10. In regards to claims 8 and 17, a delay is generated if the predetermined number of events fails to generate a predetermined number of cross-matches (par. 0108).

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11. In regards to claims 9 and 18, R-R intervals associated with the first events are compared to an average (par. 0071); a cross-match is computed (par. 0105) if the R-R intervals are greater (or less) than the average; and a template is generated from the events corresponding to the cross-matches (par. 0108).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 5, 6, 14, 15, 19, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. Kim et al. disclose the essential features of the claimed invention including a sense event that is not a ventricular pace event (par. 0067) and an event having an R-R interval greater than a predetermined rate of about 600 ms (par.

0071). Kim et al. do not disclose that sense events can comprise events other than those directly following a ventricular pace and sense events preceded by atrial paces by more than a threshold value. It is well known in the art that sensed events during or directly following an arrhythmia therapy are not representative of the natural electrical activity of the heart and should not be used as measurements representative of the natural electrical activity. Additionally, Kim et al. disclose excluding senses related to therapy application (par. 0067) and within a pacing threshold (par. 0081) to exclude beats that are not representative of the natural electrical activity. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kim et al.'s invention by excluding events following a ventricular pace and sense events preceded by an atrial pace by less than a threshold duration of time to exclude beats that are not representative of the natural electrical activity of the heart. In regards to claims 6 and 15, the modified invention of Kim et al. discloses the claimed invention, but does not disclose expressly the AV threshold interval of 100 ms. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the method as taught by Kim et al. with the threshold interval of 100 ms because applicant has not disclosed that 100 ms provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with the method as taught by Kim et al. because Kim et al.'s invention excludes sense events related to arrhythmia therapy, thus excluding sensed events that are not representative of the natural electrical activity of the heart. Therefore, it would have been an obvious matter of

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design choice to modify Kim et al.'s invention by using an AV threshold interval of 100 ms to obtain the invention as specified in the claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kahelin whose telephone number is (571) 272-8688. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MWK

*MWK*  
6/23/06

GEORGE R. EVANIS  
PRIMARY EXAMINER

6/29/6